

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-158205

(43)Date of publication of application : 13.06.2000

(51)Int.Cl.

B23B 27/14

C23C 14/06

C23C 16/30

(21)Application number : 10-332680

(71)Applicant : MITSUBISHI MATERIALS CORP

(22)Date of filing : 24.11.1998

(72)Inventor : HIRAKAWA YOSHIKI

UEDA TOSHIKI

MIICHI MASAYUKI

(54) SURFACE-COVERING CEMENTED CARBIDE ALLOY CUTTING TOOL HAVING HARD COVERING LAYER EXHIBITING EXCELLENT CHIPPING RESISTANCE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a surface-covering cemented carbide alloy cutting tool having a hard covering layer exhibiting excellent chipping resistance.

SOLUTION: This surface-covering cemented carbide alloy cutting tool is composed of a tungsten carbide group cemented carbide alloy base body and a hard covering layer formed on the body through vacuum evaporation, having a thickness of 3 to 25 μm in total average, and composed of one or both of Ti compound layers selected from the group consisting of a TiC layer, a TiN layer and a TiCN layer each having a thickness of 0.1 to 0.5 μm and having a granular crystal structure, a TiCN layer having a thickness of 2 to 15 μm and having a longitudinally grown crystal structure, and an Al_2O_3 layer having a thickness of 0.5 to 8 μm and having a granular crystal structure, the TiCN layer which constitutes the hard cover layer and which has a longitudinal granular crystal structure being composed of a I-TiCN layer having an upper surface part with a thicknesswise concentration gradient of C and N, which satisfies $x: 0.65$ to 0.95 and a lower surface part with a thicknesswise concentration gradient of C and N, which satisfies $x: 0.65$ to 0.95 when the upper and lower surface parts are exhibited by the following formula: $\text{TiC}_{1-x}\text{N}_x$, and the concentrations of C and N being stepless or stepwise changed.

LEGAL STATUS

[Date of request for examination] 31.03.2000

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 3433686

[Date of registration] 30.05.2003

[Number of appeal against examiner's decision of

rejection]

[Date of requesting appeal against examiner's
decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office